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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,975

12/01/2008

Pascale Tardieu

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EXAMINER

PATEL, RONAK C

ART UNIT

PAPER NUMBER

1788

NOTIFICATION DATE

DELIVERY MODE

02/25/2011

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

aopatent@fulbright.com



<b>Office Action Summary</b>	<b>Application No.</b> 10/599,975	<b>Applicant(s)</b> TARDIEU ET AL.	
	<b>Examiner</b> RONAK PATEL	<b>Art Unit</b> 1788	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02/04/2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 45-55, 57-59, 62-71 is/are pending in the application.
- 4a) Of the above claim(s) 57-59, 62 and 67-71 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 45-55 and 63-66 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/19/2011</u> .  | 6) <input type="checkbox"/> Other: _____                          |



### **DETAILED ACTION**

1. Applicants' response filed 02/04/2011 has been considered. In light of the new grounds of rejection set forth below, the finality of the previous office action mailed 01/13/2011 has been withdrawn and therefore, the following action is non-final

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 45-51 and 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Knox et al. (US 2005/0196626) in view of He et al. (US 2003/0082399), Degand et al. (US 6489028) and either Gilliard et al. (US 2002/0182316) or Siol et al. (US 4814207) or Imai et al. (US 2003/0108816) and further evidenced by Hawley's Condensed Chemical Dictionary

4. Regarding claims 44-51, 63-66 Knox discloses a photochromic optical article comprising a rigid substrate and a photochromic organic polymeric coating (claim 1), where the photochromic organic polymeric coating is chosen from polyurethane based coating (claim 16) and inorganic particles, composite particles are also incorporated in to the photochromic polymer coating and such particles and an average particle size ranges from 5 to 50 nanometers prior to the incorporation into the composition (para



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0083), which clearly suggests that the 100% of the particles have an average size 370 nm or less. The particles used in the photochromic polymeric coating is colloidal silica, which is aqueously dispersed, titanium oxide or mixtures thereof (para 0089) which acts as a pigment and also discloses that the particles will present in amounts less than 10 weight percent (para 0091), which meets the claim limitation that the pigment initial aqueous dispersion represent at most 10% by weight of claim 49. Knox also discloses colloidal silica particles are dispersed in water (para 0095). Knox discloses that the photochromic polymeric coating can be applied as water-borne coating as an aqueous polymer dispersion such as a latex (para 0159). Knox also discloses that the polychromatic polyurethane coating is specially preferred for use on transparent such as ophthalmic applications such as vision correcting lenses (para 0106-0109). Knox also discloses an embodiment where the photochromic articles such as ophthalmic lens, comprising a transparent organic plastic substrate and optically clear organic polymeric photochromic coating such as polyurethane based appended to atleast a portion of or atleast a surface of said plastic substrate (para 0017-0018). The photochromic coating applied to the surface of the plastic substrate will typically have a thickness of at least 10 microns (para 0118) and non limiting examples of organic substrates that can be used as polymeric organic substrates are polyurethanes, polythiourethanes (para 0102-0103), which meets the limitation of claim 65. Although, Knox does not expressly disclose the colored latex, but does disclose initial uncolored latex and a pigment. Thus, the initial uncolored latex and a pigment such as colloidal silica and Titanium oxide (white pigment) when they are mixed with each other, colored latex comprising



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uncolored latex and a pigment is formed. Although there is no explicit disclosure that the pigment is water insoluble, it is well-known, as evidenced by Hawley's Condensed Chemical Dictionary that Silica is water insoluble (page 995) and titanium oxide is water insoluble (<http://dictionary.reference.com/browse/titanium+dioxide>)

5. However, Knox fails to disclose that a coating composition comprising a swelling agent deposited on the colored latex layer.

Whereas, He discloses an antireflective coating, the anti-reflective coating may have two layers (abstract). He discloses an apparatus comprising a substrate having a coating composition, while the coating composition is suitable for coating transparent substrates such as ophthalmic lens (para 0011). He discloses in figure 1 which has a substrate 110 and optionally formed over a surface of substrate 110 is hardcoat layer 115 (para 0014) , a first deposited layer 120 (which acts as a latex layer of the present invention) where the first deposited layer comprises metal oxides such as titanium oxide (para 0015) and a second deposited layer 130 on the first deposited layer 120 which comprises an acrylate monomer (para 0020) and a solvent may further be added into formulation of second deposited layer wherein the solvent for the top coating composition may be a mixture of an alcohol solvent such as methanol and ethanol, a ketone which are swelling agents (para 0026). Alternatively, Degand discloses an ophthalmic lens includes a substrate made of organic glass, at least one abrasion resistant coating and at least one primer layer inserted between the substrate and abrasion resistant coating, the primer layer (initial latex layer of the present invention) being formed from latex including at least one latex comprising butadiene units



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(abstract). The latex composition further comprises one or more latices that do not comprise butadiene units and are chosen from polyurethane latices and solid content (dry matter content) of the latices is from 10 to 80 wt% (claims 2-4). Degand also discloses that the abrasion resistant coating was prepared which comprised of methanol (col. 8, lines 25-28) which is identical to swelling agent used in the present invention. The motivation for using coating composition comprising a swelling agent such as ketone and alcohol is to have improve adhesion properties (Gilliard, Para 0077, Imai para 0096 or Siol col. 7, lines 62-65).

6. In light of the motivation of using coating composition comprising a swelling agent such as alcohol and ketone as taught by Gilliard, Imai or Siol as described above, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to use the coating composition comprising a swelling agent of He or Degand on the colored latex layer of Knox motivated by the desire to have an excellent adhesion between the two layers.

7. Regarding claim 52, Knox fails to disclose that the latex has a dry matter content of from 20 to 50% by weight. However, Degand discloses an ophthalmic lens includes a substrate made of organic glass, at least one abrasion resistant coating and at least one primer layer inserted between the substrate and abrasion resistant coating, the primer layer being formed from latex including at least one latex comprising butadiene units (abstract). The latex composition further comprises one or more latices that do not comprise butadiene units and are chosen from polyurethane latices and solid content (dry matter content) of the latices is from 10 to 80 wt% (col. 3, lines 12-16 and claims 2-



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4). The motivation for having latex in a dry matter content of 10 to 80% is to maintain the viscosity and avoid partial coagulation of the resin

8. In light of the motivation of using the latex such as polyurethane with a solid content from 10 to 80 wt% as taught by Degand as discloses above, it therefore would have been obvious to one of ordinary skill in the art at the time of invention to use the latex particle with a solid content from 10 to 80 wt% of Degand in the colored latex layer of Knox to maintain the viscosity of the composition and to avoid partial coagulation of the composition.

9. Claims 53 and 55 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Knox et al. (US 2005/0196626), He et al. (US 2003/0082399), Degand et al. (US 6489028) and either Gilliard et al. (US 2002/0182316) or Siol et al. (US 4814207) or Imai et al. (US 2003/0108816), and further in view of Vassal et al. (US 2004/0012002)

10. Regarding claims 53 and 55, Knox in view of He fails to disclose that the initial latex particle are particles which size is less than 100 nm. However, Vassal discloses photochromic polyurethane coating (abstract) and also discloses ophthalmic article comprising an organic substrate with a surface coated with a film of photochromic material resulting from depositing and drying a polyurethane latex, where the article is ophthalmic lens (claims 26 and 28). The particle size of the polyurethane latex is from 50 to 300 nm (claim 25). The film of the photochromic material has a glass transition temperature of less than 0 C (claim 27). The motivation for having a particle size of 50 to 300 nm of polyurethane latex with a glass transition temperature of less than 0 C is to



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form an ophthalmic lens with avoiding risk of deterioration of the photochromic properties (para 0026) and improved photochromic properties (abstract)

11. In light of the motivation of having a particle size of 50 to 300 nm of polyurethane latex as taught by Vassal, it would be obvious to one of ordinary skill in the art at the time of invention to include the particle size of 50 nm of polyurethane latex with a glass transition temperature of less than 0 C in the polyurethane coating of Knox motivated by the desire to form ophthalmic lens with avoiding risk of deterioration of the photochromic properties (para 0026) and improved photochromic properties (abstract)

12. Claim 53-54 is rejected under 35 U.S.C. 103 (a) as being unpatentable over Knox et al. (US 2005/0196626) and He et al. (US 2003/0082399), Degand et al. (US 6489028) and either Gilliard et al. (US 2002/0182316) or Siol et al. (US 4814207) or Imai et al. (US 2003/0108816), and further in view of Vassal et al. (US 2004/0012002)

13. Regarding claims 53-54, Knox fails to disclose that the initial latex which is polyurethane, 95 wt% has a particle size of less than 15 nm. Whereas, Farber discloses a process for improving the impact resistance of a coated plastic substrate and polyurethane dispersion as a primer layer to at least one surface of the plastic substrate (abstract), where transparent substrate used as an ophthalmic lens (para 0015). Farber discloses that the aqueous polyurethane dispersion has a solid content from about 5 to about 40 % and an average particle size is in the range of about 10 nm to about 100 nm (col. 4, lines 4-45).

14. It would be obvious to one of ordinary skill in the art at the time of invention to control the size of the particles by routine experimentation and include the particles



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where the 95wt% of the particles have a size of less than 15 nm in Farber in the colored latex layer comprising polyurethane latex of Knox motivated by the desire to form an ophthalmic lens with avoiding risk of deterioration of the photochromic properties (para 0026) and improved photochromic properties (abstract).

### ***Response to Arguments***

15. It is noted that the following response to arguments is based on applicants arguments filed in the first after-final amendment of 12/28/2010.

16. Applicant argues that the list of particles that can be selected in Knox (US 2005/0196626) is far greater than what the examiner references at page 8 and particles referenced by the examiner are not even referred as pigments.

17. However, Applicant discloses that use of pigments which includes colloidal silica, titanium oxide or cesium oxide. While Knox does not explicitly refer to colloidal silica, titanium oxide or cesium oxide as pigments, given that they are identical to the ones used by the applicant in his invention, it is clear that they would intrinsically be pigments. Further, it should be noted that while Knox does disclose other pigments or particles than those claimed, Knox does not disclose a vast number of pigments from which to choose. Additionally, Knox explicitly discloses pigments such as colloidal silica, titanium oxide, cesium oxide and mixtures thereof. Therefore, absent evidence to the contrary, it would have been obvious to one of the ordinary skill in the art to pick colloidal silica, titanium oxide mixed together with the polyurethane latex, which is also disclosed by Knox ([0159]), in the photochromic polymeric coating composition.



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18. Applicants argue that Chen (US 2008/0311287) is not a proper reference against the present claims given that in light of its earliest possible prior art date, it is not proper prior art against the claims. It is agreed which is why Chen '287 is no longer used against the present claims.

19. It is noted that claim 62 has improper status identifier. Claim 62 should be indicated as "Withdrawn".

### ***Conclusion***

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONA K PATEL whose telephone number is (571)270-1142. The examiner can normally be reached on Monday to Thursday 8 AM EST to 6PM EST.

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie Shosho can be reached on 571-272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a



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USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. P./

Examiner, Art Unit 1788

02/14/2011

/Callie E. Shosho/

Supervisory Patent Examiner, Art Unit 1787